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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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In the Matter of:

Allocation of Spectrum Below
5 GHz Transferred from Federal
Government Use

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ET Docket No. 94-32

DEC 12 1994

COMMENTS OF
ADVANCED MICRO DEVICES, INC.

Advanced Micro Devices, Inc. ("AMD"), by its attorneys, respectfully submits its comments regarding the Notice of Proposed Rulemaking in the above-captioned proceeding ("Notice").¹ The Notice proposes to designate the initial 50 MHz of spectrum transferred from the federal government "to general Fixed and Mobile services, rather than specify these frequency bands for particular uses."² AMD is submitting these comments out of concern that making the frequencies from 2402-2417 MHz available for licensed services would preclude continued Part 15 use of the entire 2.4 GHz band and seriously harm American consumers and manufacturers.

I. STATEMENT OF INTEREST

AMD is a manufacturer of semiconductor integrated circuits ("ICs") for the computing and communications industries. Its products provide the intelligence for wireless computing devices, local area networks, security and

¹ FCC 94-272 (released November 8, 1994).

² Notice at ¶ 9. The initial 50 MHz are comprised of the 2390-2400, 2402-2417, and 4660-4685 MHz bands. AMD's comments herein are limited to 2402-2417 MHz.

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monitoring systems, and other Part 15 devices built by a host of American companies. Many of these devices utilize the 2.4 GHz band, pursuant to FCC policies adopted only four years ago in order to "encourage the further development and implementation of the 'exciting new family of spread spectrum technologies.'"³

AMD supports the Commission's overall efforts to expedite the availability of the transferred spectrum for new technologies and services. It disagrees entirely, however, that the 2402-2417 MHz band is well-suited for reassignment to licensed services. The Notice states that the Commission hopes to "create new jobs, foster economic growth, and improve access to communications by industry and the American public."⁴ Part 15 use of the 2.4 GHz band admirably achieves these objectives, and any action that compromises the utility of that band for such applications would undermine, rather than advance, the Commission's fundamental goals.

II. THE COMMISSION SHOULD NOT MAKE THE 2402-2417 MHZ BAND AVAILABLE FOR LICENSED USE.

The Notice asks whether Part 15 use of the 2402-2417 MHz band should be eliminated, retained in conjunction with licensed use of these frequencies, or retained while limiting

³ Notice, Appendix D, at D-6 note 31, citing Amendments of Parts 2 and 15 of the Rules with Regard to Spread Spectrum Devices, 5 FCC Rcd 4213, 4124 (1990).

⁴ Notice at ¶ 1.

licensed use of this band.⁵ For several reasons, AMD submits that the public interest will best be served by allowing continued Part 15 use of 2402-2417 MHz on an uncompromised basis and preventing licensed, primary use.

First, Part 15 use of this band creates enormous public benefits. Thousands of devices already are deployed in this band, supporting such valuable applications as fire and security alarms, remote utility metering, retail surveillance, and wireless bar code readers. Precluding continued use of these frequencies would create millions of dollars in stranded investment and leave consumers with no reasonable substitute. The 900 MHz frequencies available for Part 15 use are congested, and the 2.4 GHz band offers uniquely suitable additional spectrum for continued development and growth of these devices. In addition, commercially available wireless services are not viable alternatives because they do not provide the requisite reliability and capabilities, and wired solutions are plainly inadequate for many of these applications.

Second, innovative and valuable new Part 15 uses of these frequencies, such as mobile computers and wireless LANs, will be deployed shortly. These developments plainly will "improve access to communications by industry and the American public." For example, they will help expand the

⁵ Id. at ¶ 18.

availability of networked computing in the nation's public schools by reducing the need for expensive and disruptive wiring, and will support remote medical monitoring within hospitals and private homes. Implementation of these technological innovations, which have been specifically identified by Vice President Gore, Chairman Hundt, and other government officials as primary objectives of the national information infrastructure, should not be frustrated by the lure of auction revenues.⁶

Third, equity and competitive policy considerations strongly support continued Part 15 use of the entire 2.4 GHz band. Dozens of American manufacturers, most of which are small, highly innovative companies, have invested heavily in developing spread spectrum technology at 2.4 GHz in reliance on the FCC's 1990 decision in Docket No. 89-354.⁷ AMD, for example, has dedicated seven employees to the IEEE 802.11 Wireless LAN standards committee. If the utility of the 2.4 GHz band for wireless LANs is compromised, AMD estimates that millions of dollars of engineering investment would be lost by companies involved in standard development activities, and that additional losses for preliminary product development

⁶ Indeed, in Section 309(j)(7)(A) of the Communications Act, Congress barred the FCC from pursuing an auction-at-any-cost allocation strategy by prohibiting consideration of potential revenues in decisions to allocate spectrum to particular purposes.

⁷ See note 3, supra.

will be far greater. On a broader scale, impeding the utility of 2.4 GHz for Part 15 devices would obsolete billions of dollars in research and development, engineering and production plant, and inventory. Faced with this prospect only four years after the FCC declared a desire to promote investment in 2.4 GHz Part 15 devices, manufacturers and consumers naturally will discount similar Commission pronouncements in the future. The societal cost, in terms of stifled innovation and entrepreneurial spirit, would be immeasurable.

Fourth, the 2402-2417 MHz band is ill-suited to primary use by licensed services. The background noise level generated by millions of microwave ovens is incompatible with high quality, reliable, wide-area wireless services. In contrast, Part 15 devices can tolerate this level of interference because of agile, robust direct sequence and frequency-hopping spread spectrum technologies. Taking away the frequencies at 2402-2417 MHz, either directly or by permitting primary licensed use, would significantly reduce the utility of the entire 2.4 GHz band for Part 15 devices while producing little, if any, usable spectrum for licensed services.⁸ AMD respectfully submits that such a reallocation

⁸ This significant reduction would occur because the frequencies from 2402-2417 MHz comprise a relatively quiet portion of the 2.4 GHz ISM band in terms of microwave interference (albeit possessing a noise level that would be intolerable for wide-area, licensed use).

simply cannot be justified on a cost/benefit basis. Indeed, whatever meager government revenues might be realized from auctioning this spectrum would be dwarfed by the stranded investment and foregone innovation noted above.

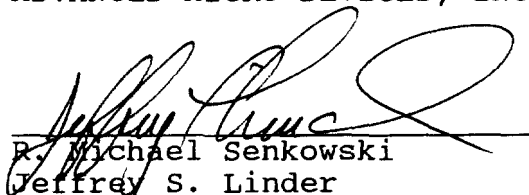
III. CONCLUSION

For the foregoing reasons, AMD urges the Commission to continue to allow Part 15 use of the entire 2.4 GHz band and to take no action that would compromise the utility of that band for spread spectrum, unlicensed devices.

Respectfully submitted,

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